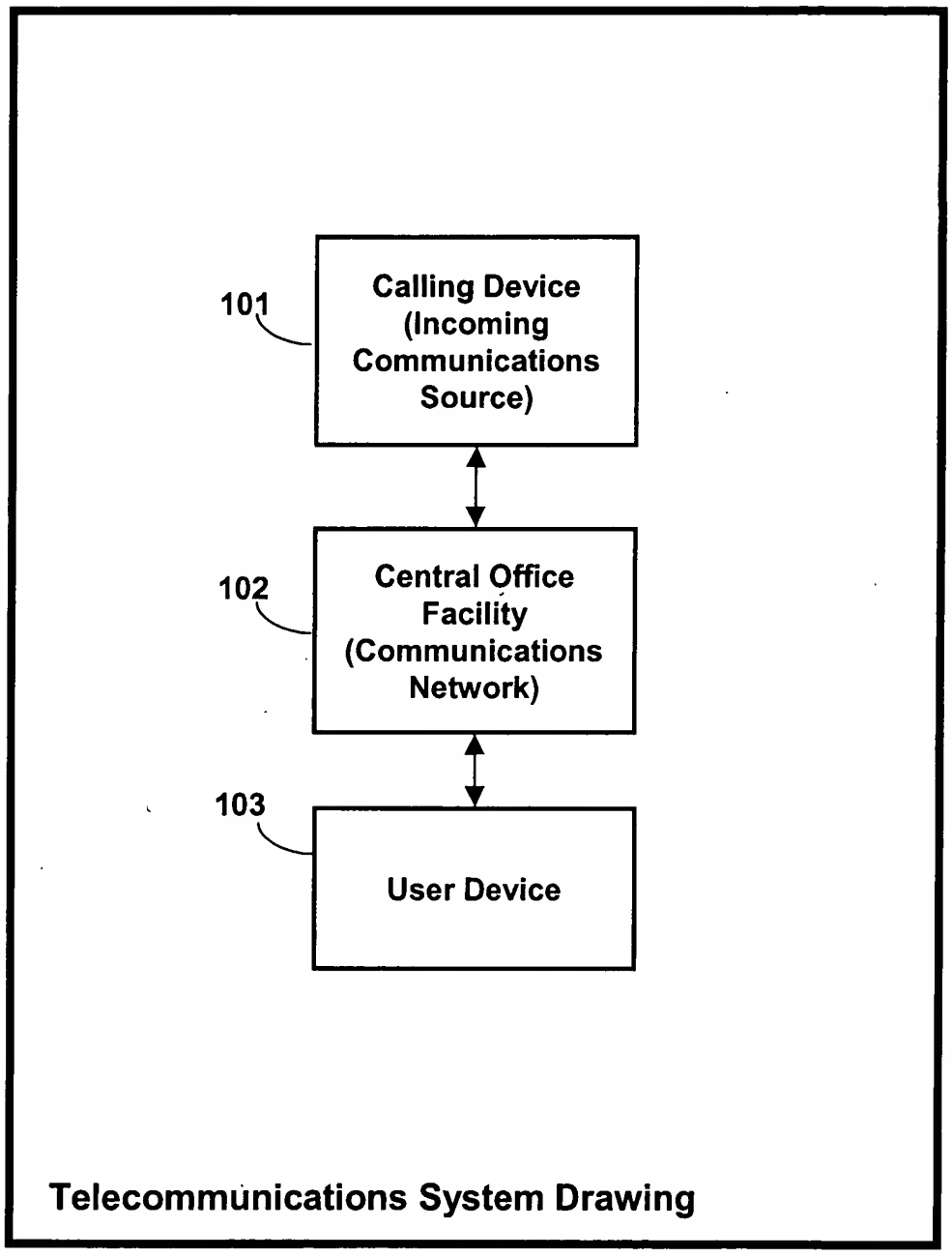
101
Calling Device (Incoming Communications Source)
102
Central Office Facility (Communications Network)
103
User Device
Telecommunications System Drawing

Fig. 1

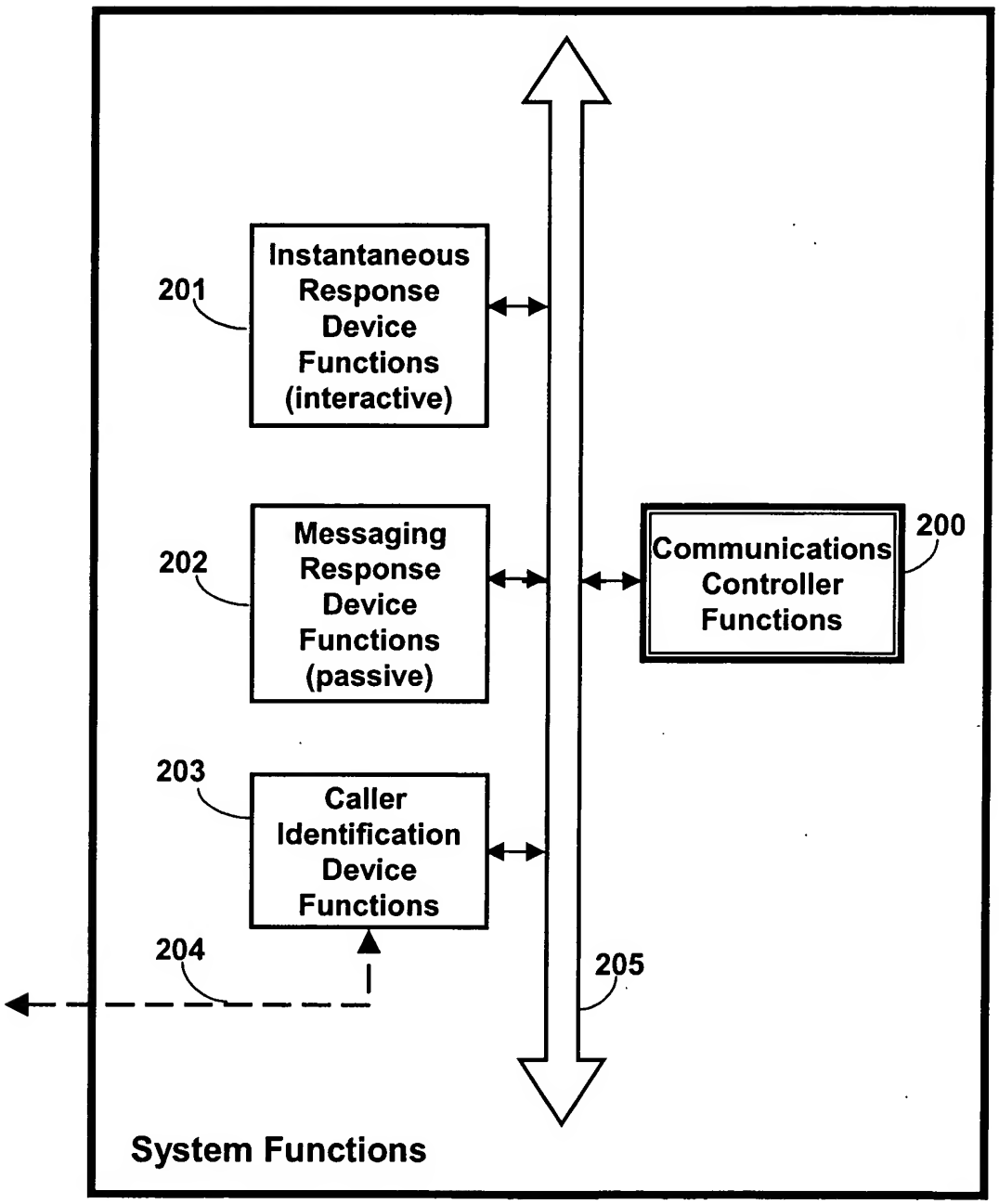
Instantaneous Response Device Functions (interactive)
201
Messaging Response Device Functions (passive)
202
Caller Identification Device Functions
203
204
Communications Controller Functions
200
205
System Functions

Fig. 2

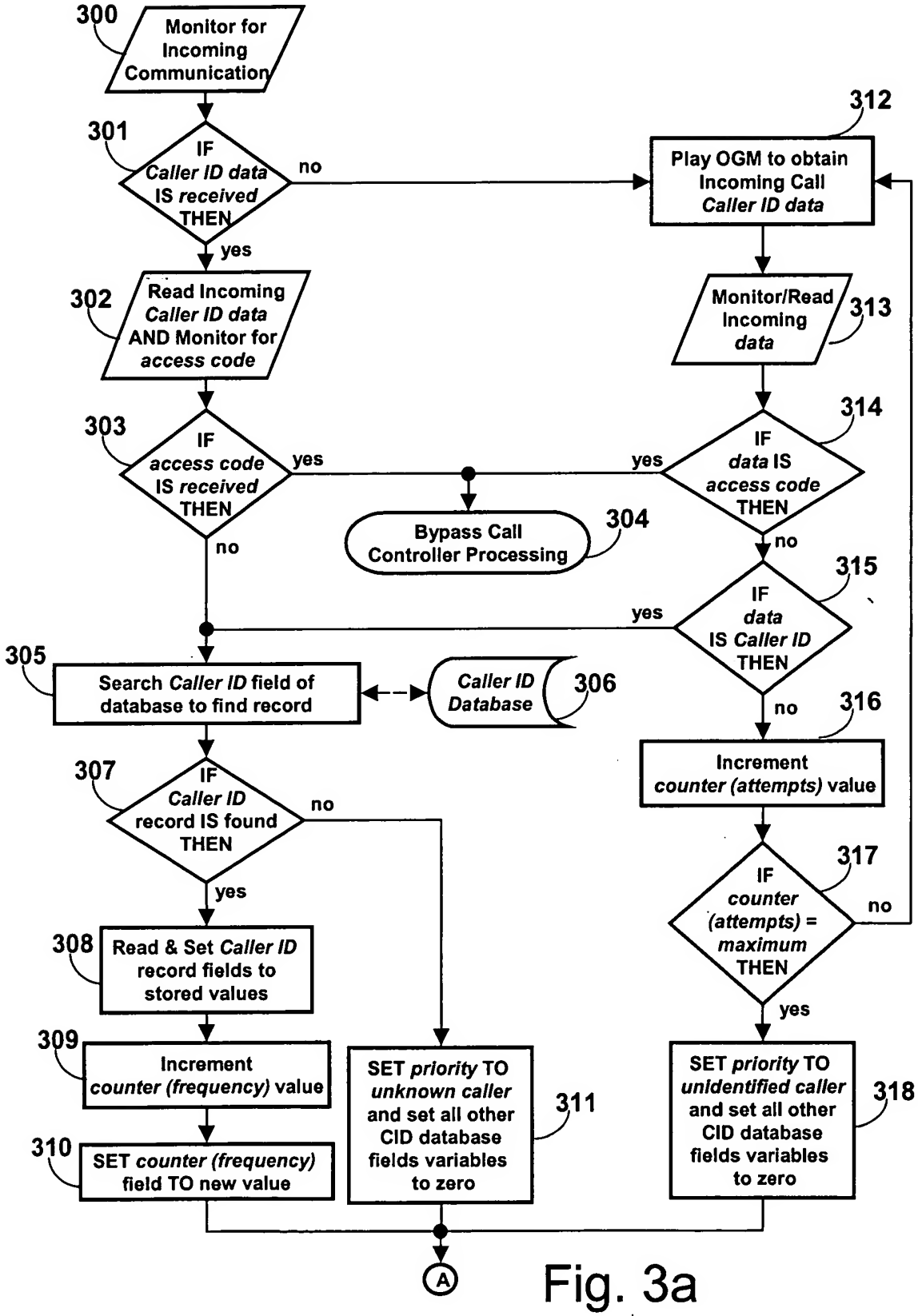
300
Monitor for Incoming Communication
301
IF Caller ID data IS received THEN
no
yes
312
Play OGM to obtain Incoming Call Caller ID data
302
Read Incoming Caller ID data AND Monitor for access code
Monitor/Read Incoming data
313
303
IF access code IS received THEN
yes
yes
314
IF data IS access code THEN
Bypass Call Controller Processing
304
no
no
315
IF data IS Caller ID THEN
yes
305
Search Caller ID field of database to find record
Caller ID Database
306
no
316
Increment counter (attempts) value
307
IF Caller ID record IS found THEN
no
317
IF counter (attempts) = maximum THEN
no
yes
yes
308
Read & Set Caller ID record fields to stored values
309
Increment counter (frequency) value
SET priority TO unknown caller and set all other CID database fields variables to zero
311
SET priority TO unidentified caller and set all other CID database fields variables to zero
318
310
SET counter (frequency) field TO new value
A

Fig. 3a

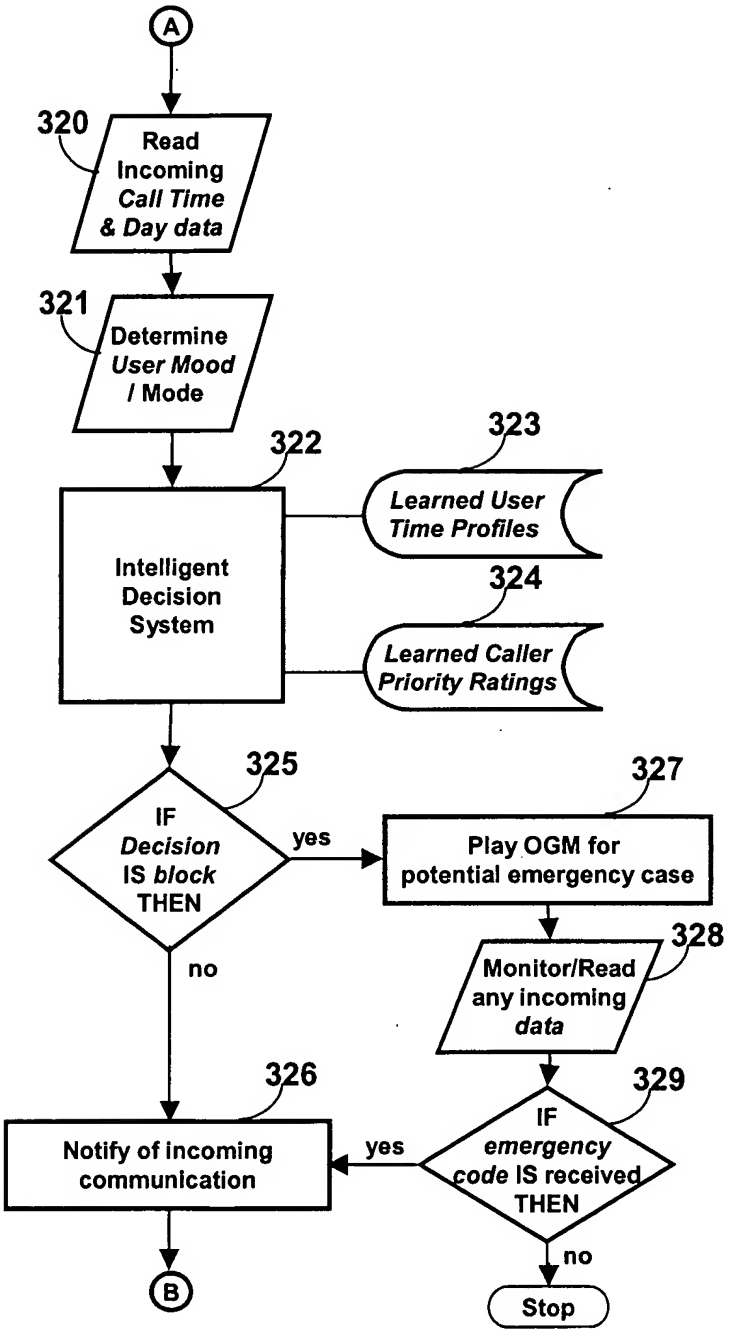
A
320
Read Incoming Call Time & Day data
321
Determine User Mood / Mode
322
323
Learned User Time Profiles
Intelligent Decision System
324
Learned Caller Priority Ratings
325
IF Decision IS block THEN
yes
327
Play OGM for potential emergency case
328
Monitor/Read any incoming data
no
326
329
IF emergency code IS received THEN
yes
Notify of incoming communication
no
B
Stop

Fig. 3b

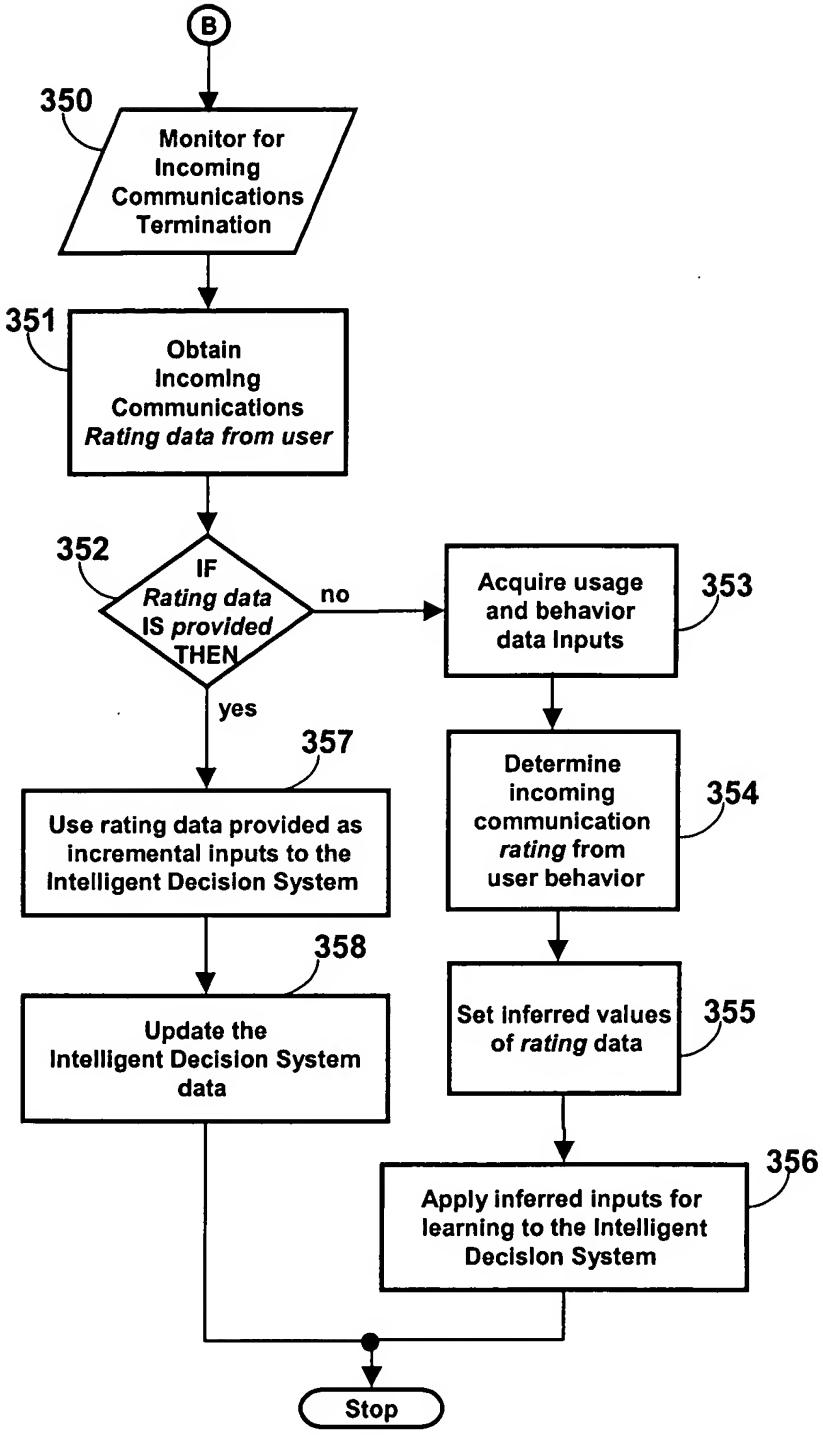
B
350
Monitor for Incoming Communications Termination
351
Obtain Incoming Communications *Rating data from user*
352
IF *Rating data* IS *provided* THEN
no
yes
353
Acquire usage and behavior data Inputs
354
Determine incoming communication *rating* from user behavior
355
Set inferred values of *rating* data
356
Apply inferred inputs for learning to the Intelligent Decision System
357
Use rating data provided as incremental inputs to the Intelligent Decision System
358
Update the Intelligent Decision System data
Stop

Fig. 3c

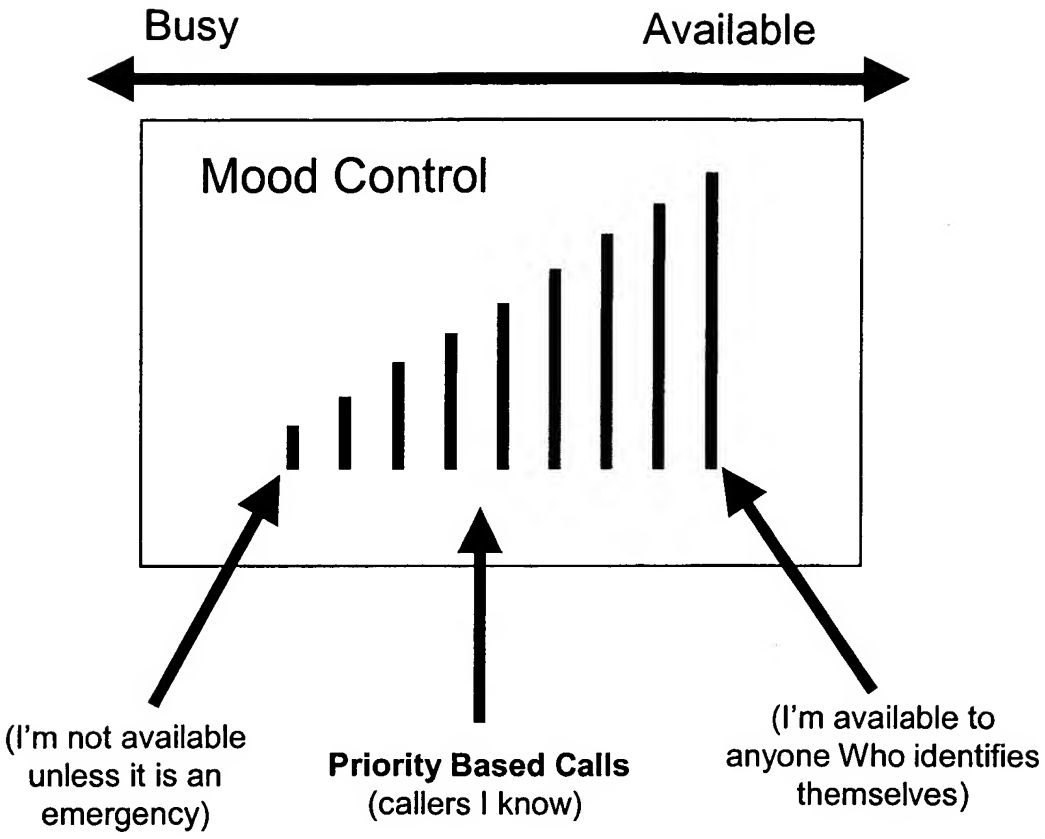
Busy
Available
Mood Control
(I'm not available unless it is an emergency)
Priority Based Calls
(callers I know)
(I'm available to anyone Who identifies themselves)

Fig. 4

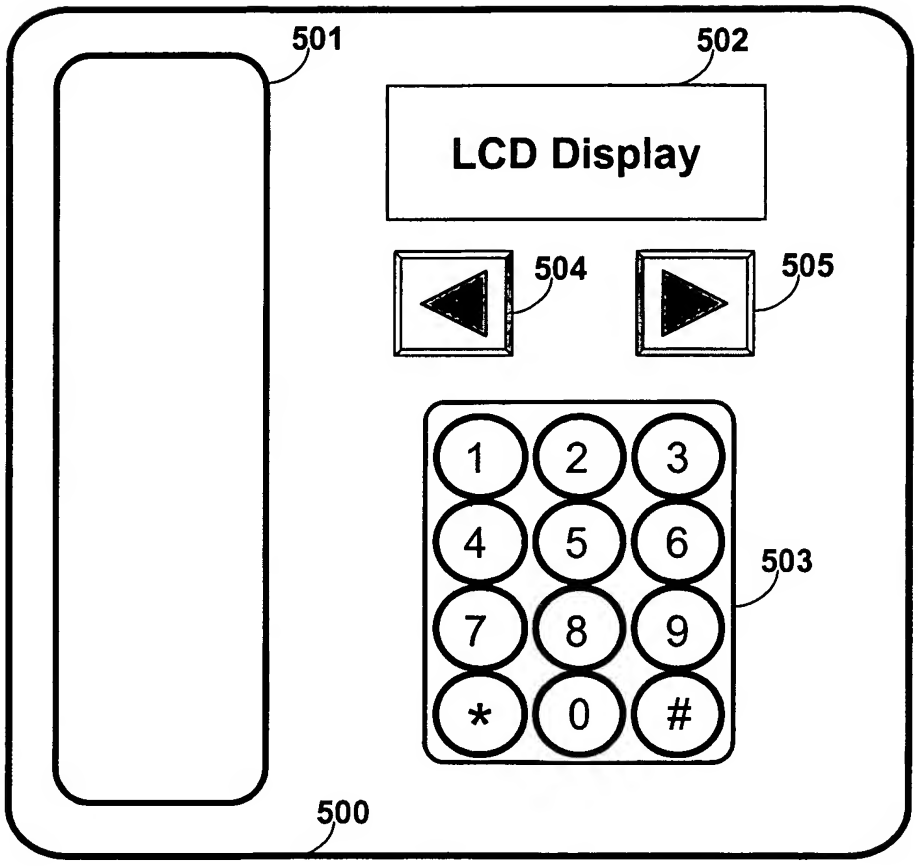

Fig. 5

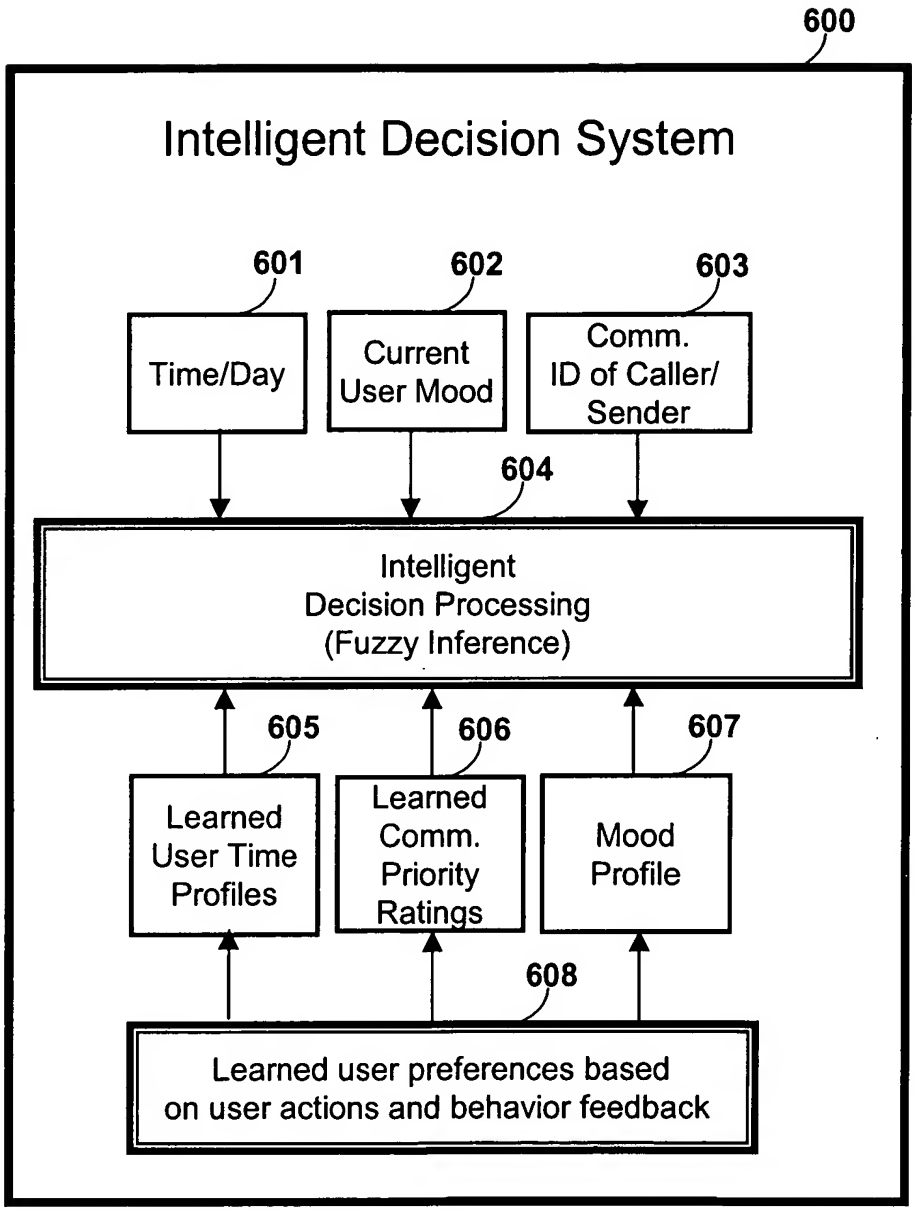
600
Intelligent Decision System
601
602
603
Time/Day
Current User Mood
Comm. ID of Caller/ Sender
604
Intelligent Decision Processing (Fuzzy Inference)
605
606
607
Learned User Time Profiles
Learned Comm. Priority Ratings
Mood Profile
608
Learned user preferences based on user actions and behavior feedback

Fig. 6

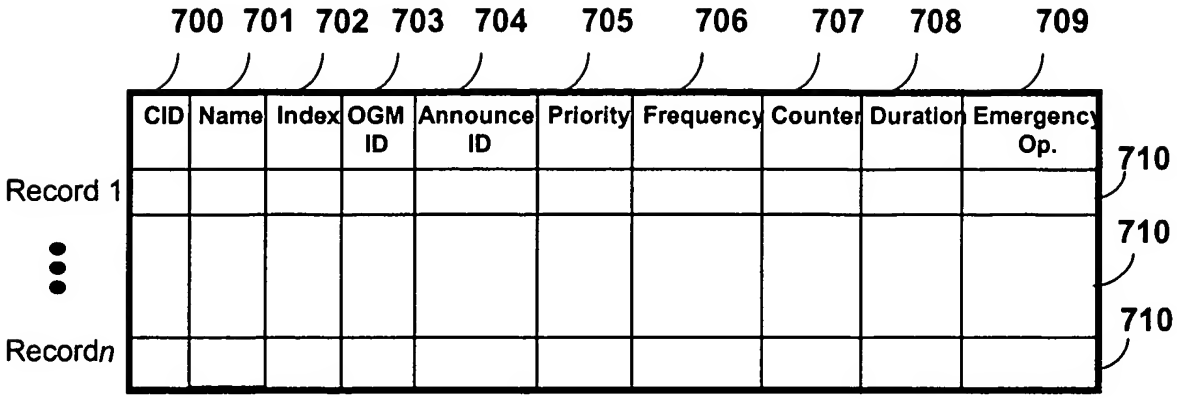

Fig. 7

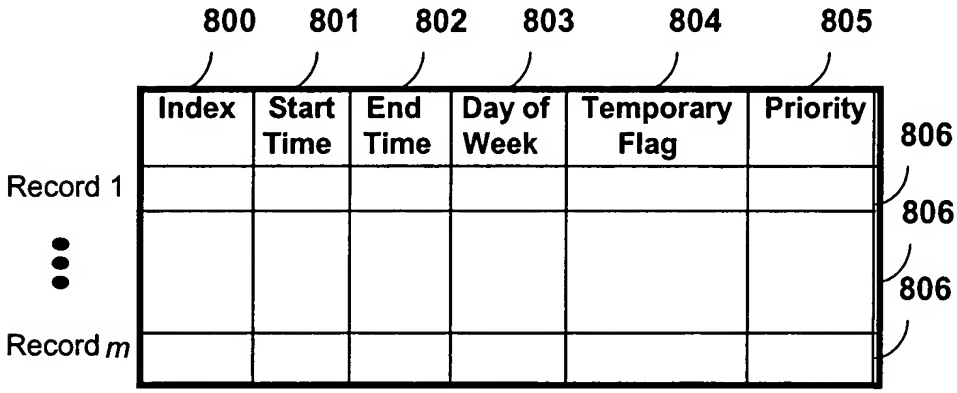

Fig. 8

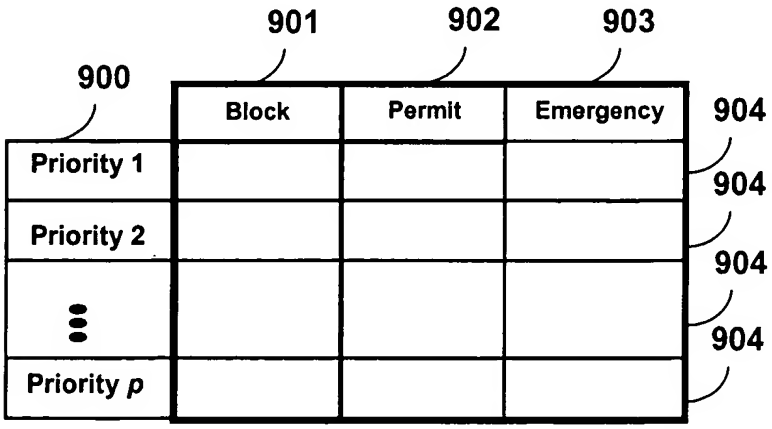

Fig. 9

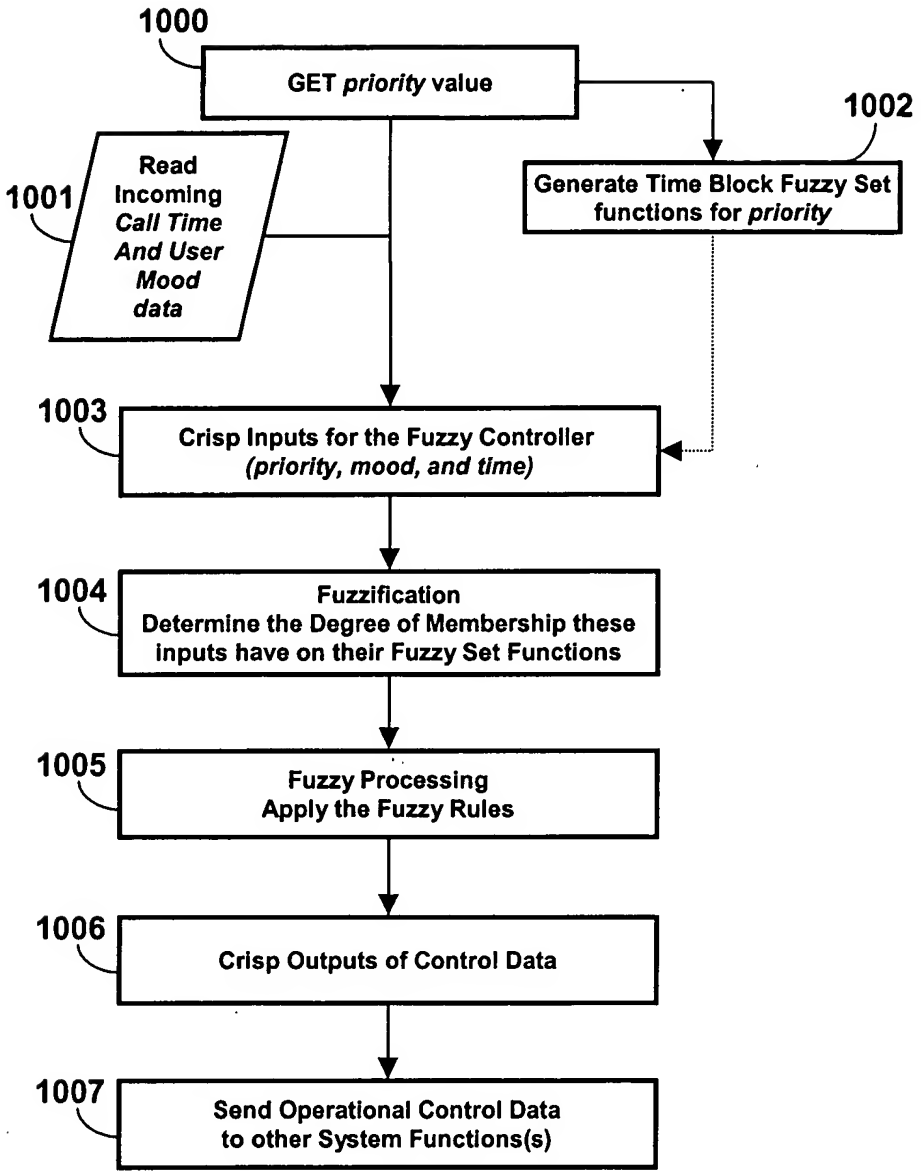
1000
GET priority value
1002
Generate Time Block Fuzzy Set functions for priority
1001
Read Incoming Call Time And User Mood data
1003
Crisp Inputs for the Fuzzy Controller (priority, mood, and time)
1004
Fuzzification
Determine the Degree of Membership these inputs have on their Fuzzy Set Functions
1005
Fuzzy Processing
Apply the Fuzzy Rules
1006
Crisp Outputs of Control Data
1007
Send Operational Control Data to other System Functions(s)

Fig. 10

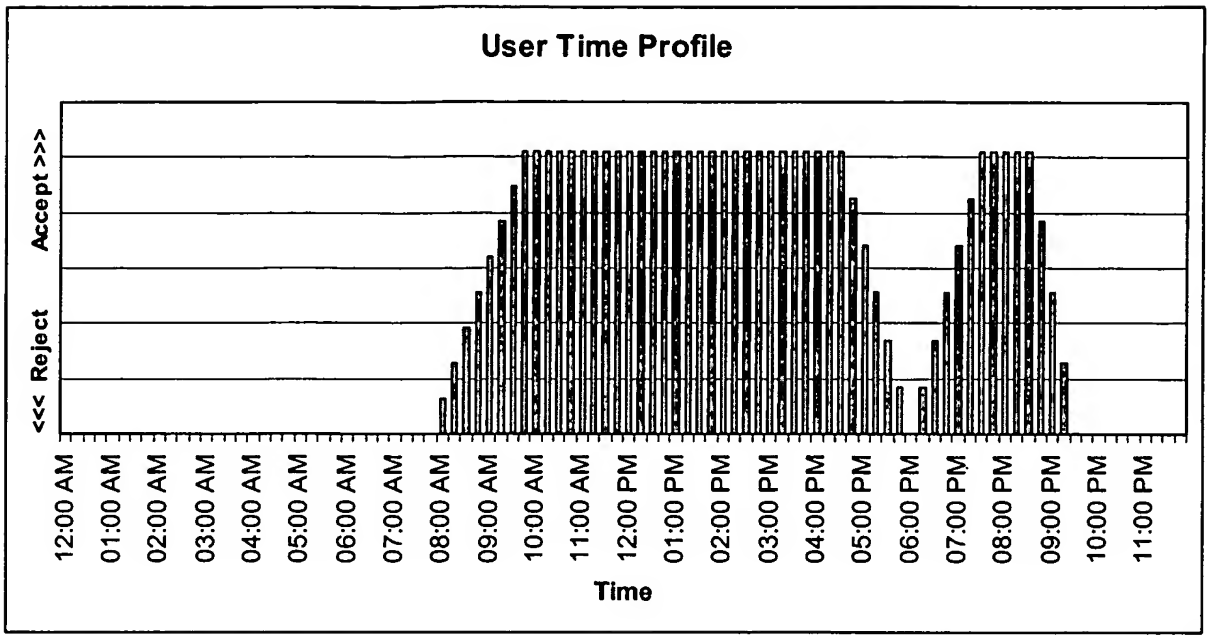
User Time Profile
Accept >>>
<<< Reject
12:00 AM
01:00 AM
02:00 AM
03:00 AM
04:00 AM
05:00 AM
06:00 AM
07:00 AM
08:00 AM
09:00 AM
10:00 AM
11:00 AM
12:00 PM
01:00 PM
02:00 PM
03:00 PM
04:00 PM
05:00 PM
06:00 PM
07:00 PM
08:00 PM
09:00 PM
10:00 PM
11:00 PM
Time

Fig. 11

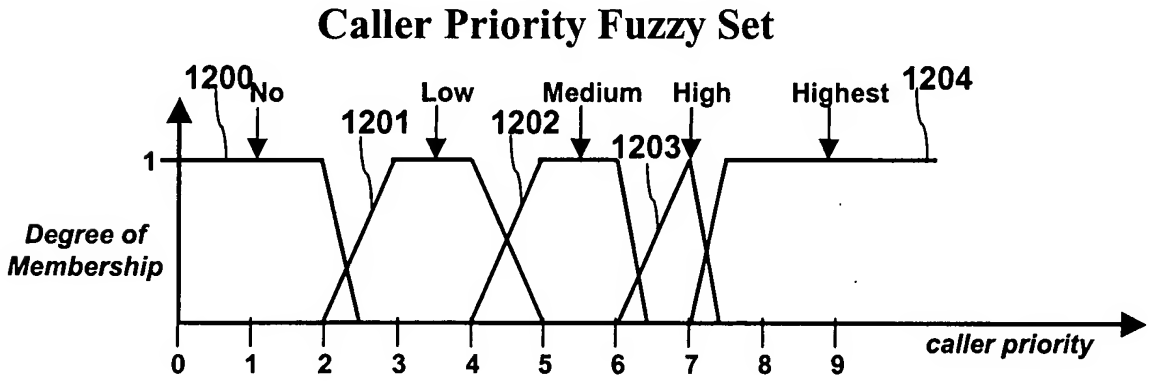
Caller Priority Fuzzy Set
1200
No
1201
Low
1202
Medium
1203
High
Highest
1204
1
Degree of Membership
0
1
2
3
4
5
6
7
8
9
caller priority

Fig. 12

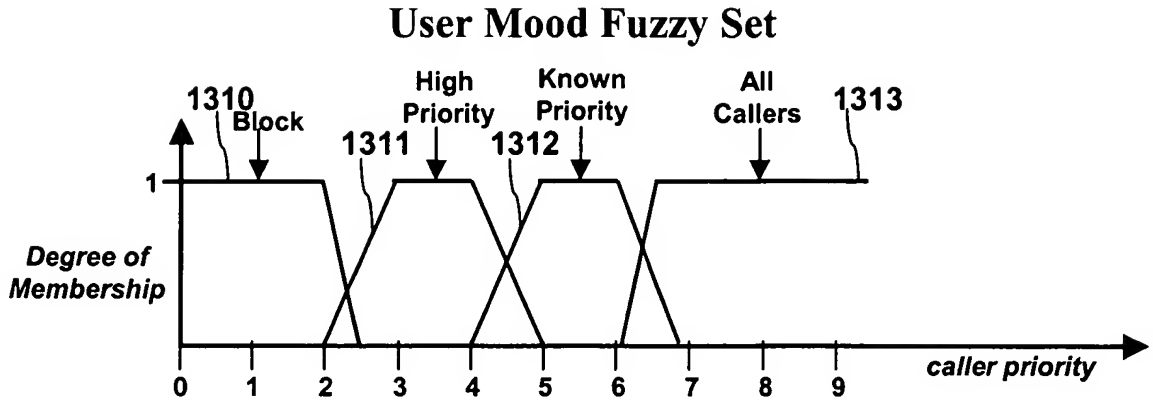
User Mood Fuzzy Set
1310
Block
1311
High Priority
1312
Known Priority
All Callers
1313
1
Degree of Membership
0 1 2 3 4 5 6 7 8 9
caller priority

Fig. 13

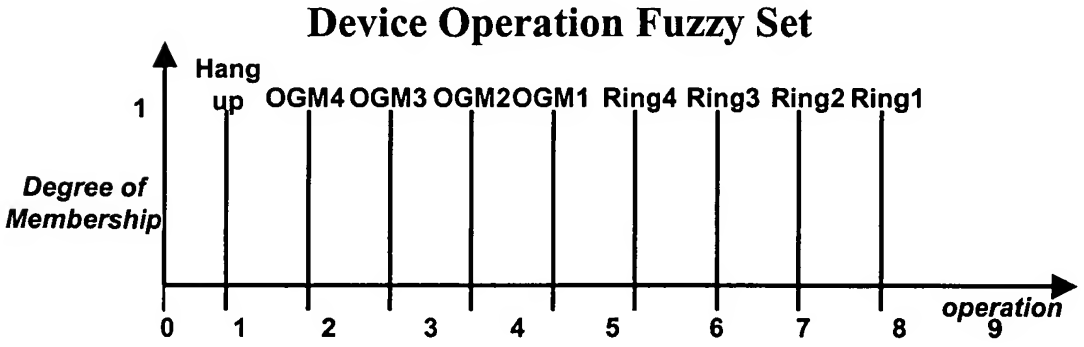
Device Operation Fuzzy Set
Hang up
OGM4 OGM3 OGM2 OGM1 Ring4 Ring3 Ring2 Ring1
1
Degree of Membership
0 1 2 3 4 5 6 7 8 9
operation

Fig. 14

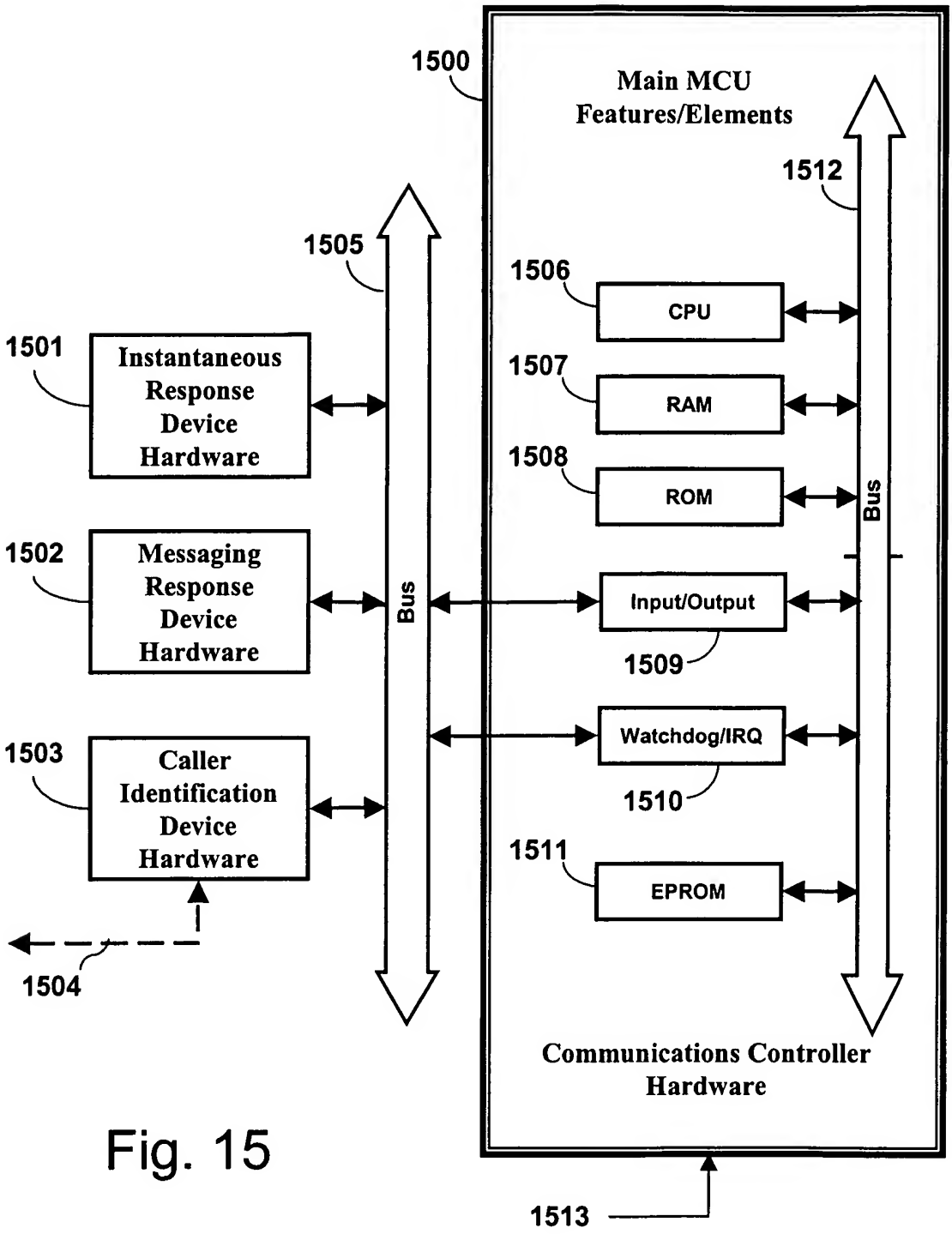
1500
Main MCU
Features/Elements
1512
1505
1506
CPU
1507
RAM
1508
ROM
Bus
1501
Instantaneous
Response
Device
Hardware
1502
Messaging
Response
Device
Hardware
Bus
Input/Output
1509
Watchdog/IRQ
1510
1503
Caller
Identification
Device
Hardware
1511
EPROM
1504
Communications Controller
Hardware
1513

Fig. 15

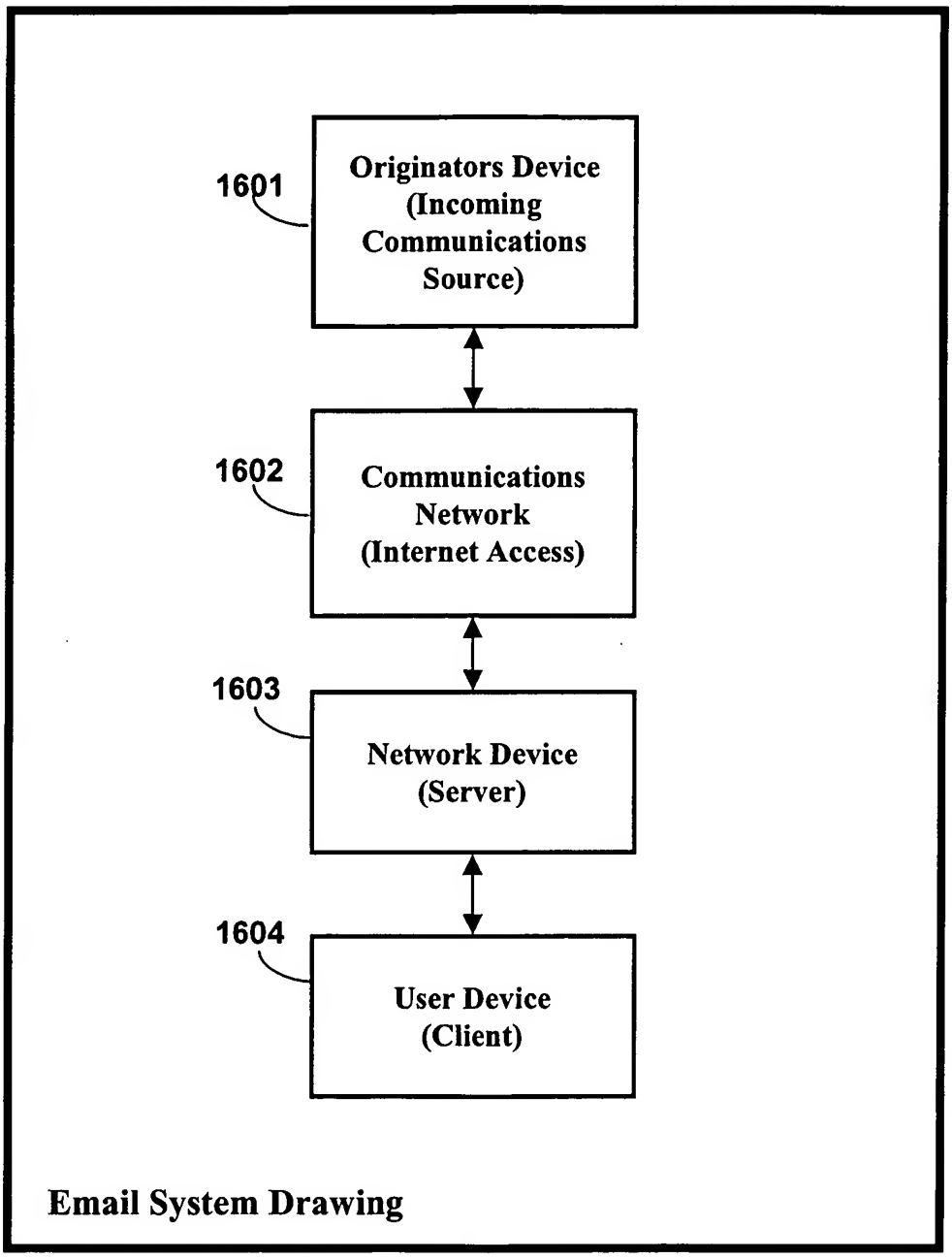
1601
Originators Device (Incoming Communications Source)
1602
Communications Network (Internet Access)
1603
Network Device (Server)
1604
User Device (Client)
Email System Drawing

Fig. 16

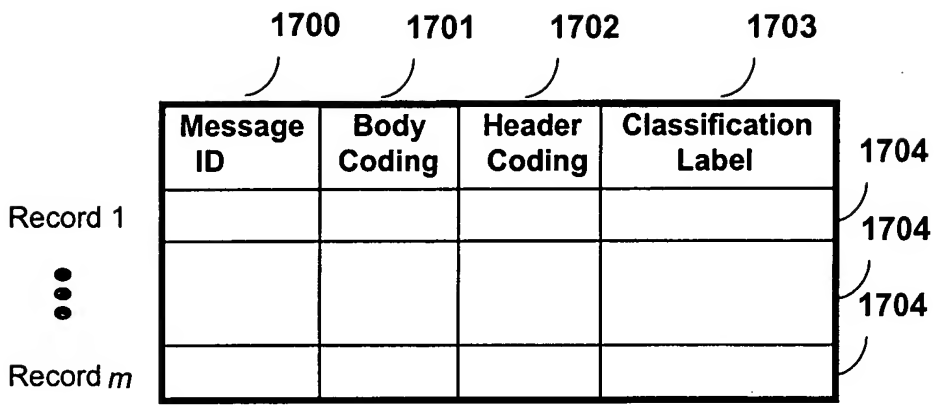
1700
1701
1702
1703
Message ID
Body Coding
Header Coding
Classification Label
1704
Record 1
1704
1704
Record m

Fig. 17

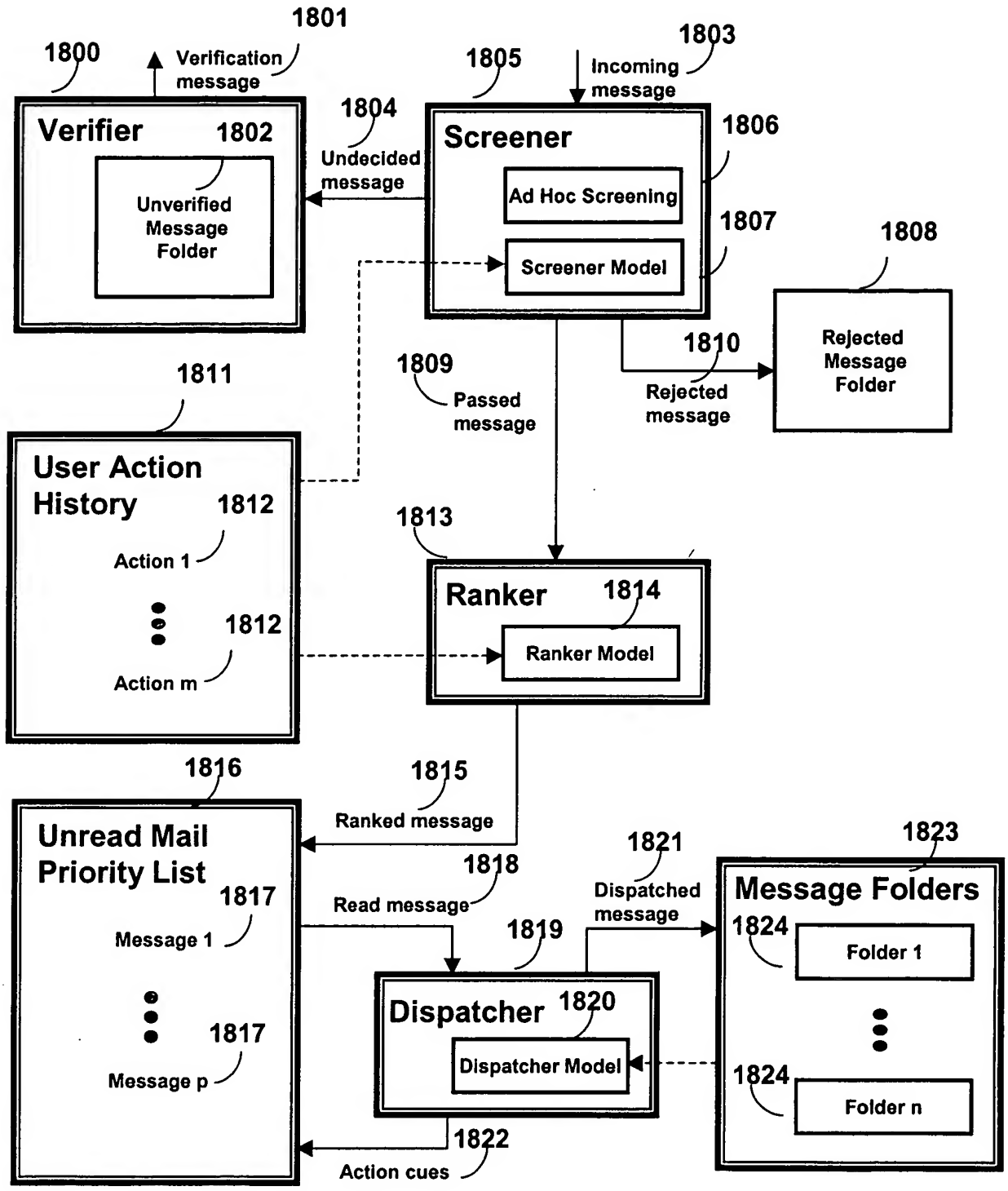
1800
1801
Verification message
Verifier
1802
Unverified Message Folder
1803
1805
Incoming message
1804
Undecided message
Screener
1806
Ad Hoc Screening
1807
Screener Model
1808
Rejected Message Folder
1810
Rejected message
1809
Passed message
1811
User Action History
1812
Action 1
1812
Action m
1813
Ranker
1814
Ranker Model
1816
Unread Mail Priority List
1817
Message 1
1817
Message p
1815
Ranked message
1818
Read message
1819
1821
Dispatched message
1823
Message Folders
1824
Folder 1
1824
Folder n
Dispatcher
1820
Dispatcher Model
1822
Action cues

Fig. 18

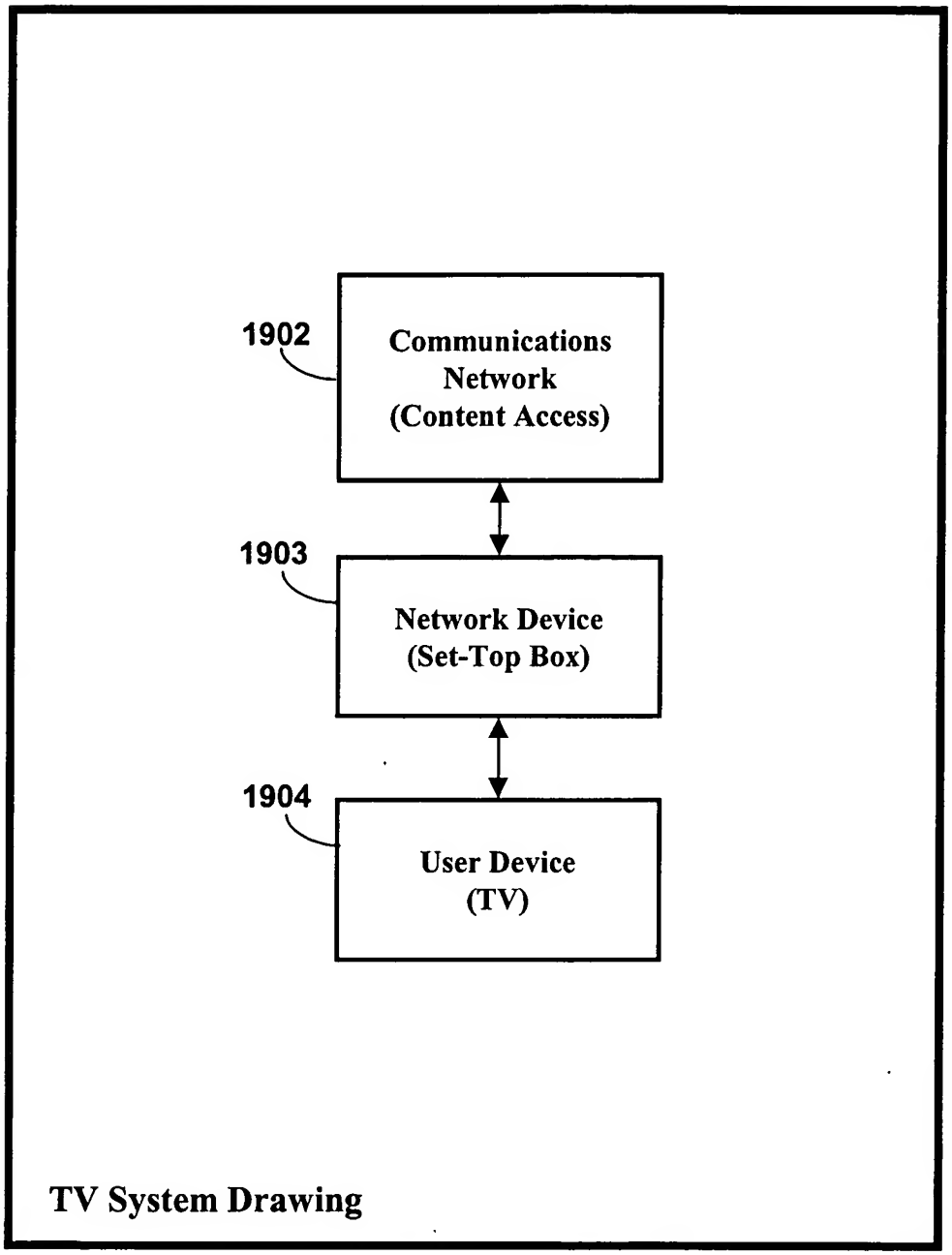
1902
Communications Network (Content Access)
1903
Network Device (Set-Top Box)
1904
User Device (TV)
TV System Drawing

Fig. 19

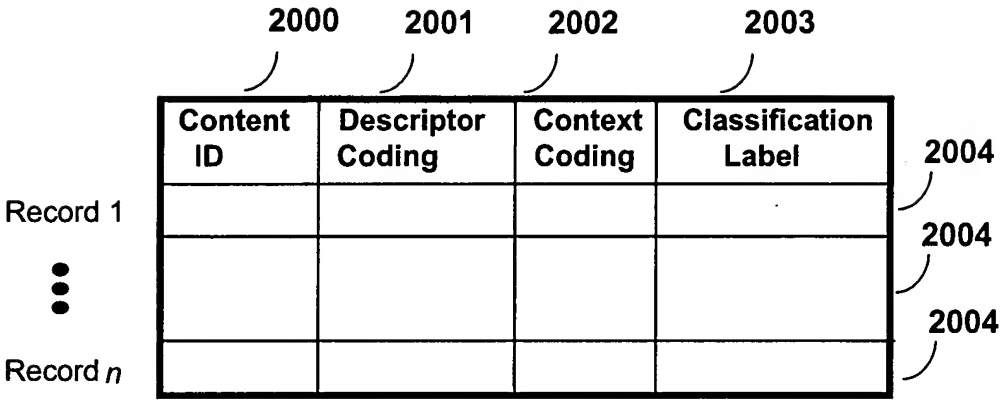
2000
2001
2002
2003
Content ID
Descriptor Coding
Context Coding
Classification Label
2004
2004
2004
Record 1
Record n

Fig. 20

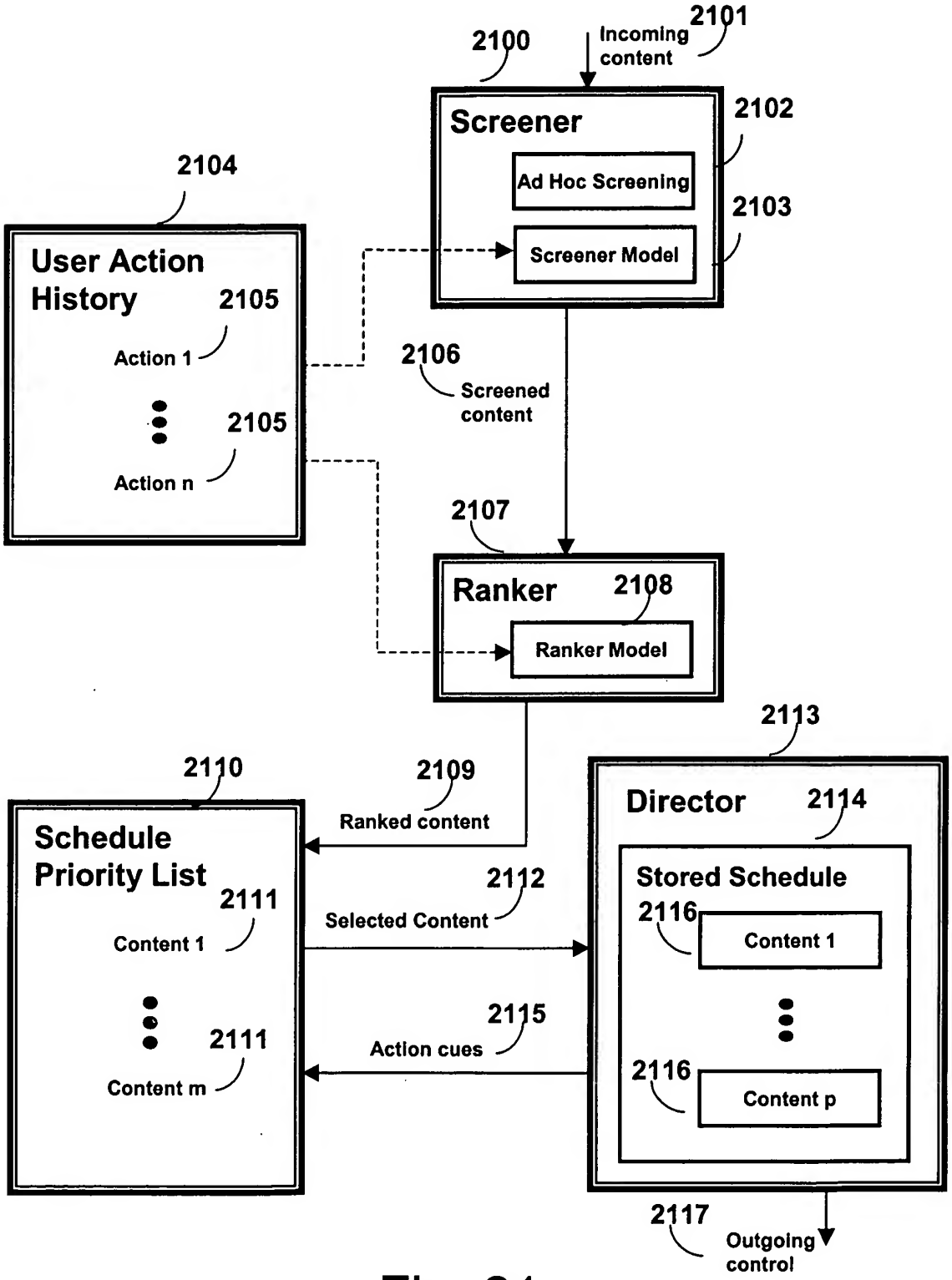
2100
Incoming content
2101
Screener
2102
Ad Hoc Screening
2103
Screener Model
2104
User Action History
2105
Action 1
2105
Action n
2106
Screened content
2107
Ranker
2108
Ranker Model
2109
Ranked content
2110
Schedule Priority List
2111
Content 1
2111
Content m
2112
Selected Content
2113
Director
2114
Stored Schedule
2116
Content 1
2116
Content p
2115
Action cues
2117
Outgoing control

Fig. 21